



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2019-0322; Product Identifier 2019-NM-039-AD]**

**RIN 2120-AA64**

**Airworthiness Directives; Bombardier, Inc., Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** We propose to adopt a new airworthiness directive (AD) for certain Bombardier, Inc., Model DHC-8-400 series airplanes. This proposed AD was prompted by reports of cracked elevator power control unit (PCU) brackets on the horizontal stabilizer rear spar and cracking on the elevator front spar. This proposed AD would require one-time inspections for cracks and damage of the elevator PCU brackets and surrounding area, horizontal stabilizer rear spar, and elevator front spar, and related investigative and corrective actions if necessary. We are proposing this AD to address the unsafe condition on these products.

**DATES:** We must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:



- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.

- Fax: 202-493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact Bombardier, Inc., Q-Series Technical Help Desk, 123 Garratt Boulevard, Toronto, Ontario M3K 1Y5, Canada; telephone 416-375-4000; fax 416-375-4539; email [thd.qseries@aero.bombardier.com](mailto:thd.qseries@aero.bombardier.com); Internet <http://www.bombardier.com>. You may view this service information at the FAA, Transport Standards Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2019-0322; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this NPRM, the regulatory evaluation, any comments received, and other information. The street address for Docket Operations (phone: 800-647-5527) is listed above. Comments will be available in the AD docket shortly after receipt.



**FOR FURTHER INFORMATION CONTACT:** Andrea Jimenez, Aerospace Engineer, Airframe and Mechanical Systems Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7330; fax 516-794-5531.

**SUPPLEMENTARY INFORMATION:**

**Comments Invited**

We invite you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2019-0322; Product Identifier 2019-NM-039-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this NPRM. We will consider all comments received by the closing date and may amend this NPRM because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this NPRM.

**Discussion**

Transport Canada Civil Aviation (TCCA), which is the aviation authority for Canada, has issued Canadian AD CF-2018-34, dated December 17, 2018 (referred to after this as the Mandatory Continuing Airworthiness Information, or “the MCAI”), to



correct an unsafe condition for certain Bombardier, Inc., Model DHC-8-400 series airplanes. The MCAI states:

There have been five in-service reports of cracked elevator power control unit (PCU) brackets on the horizontal stabilizer rear spar, and two reports of cracking on the elevator front spar. In one case, the PCU bracket cracking led to detachment of the bracket during pushback. An investigation found that the force-flight loads induced by elevator PCUs not rigged to the required tolerance is the common factor in cracking of both the elevator PCU bracket and of the elevator front spar. A secondary contributor to the elevator PCU bracket cracking is the bracket flange preload that may be induced during production installation. Failure of an elevator PCU bracket or progression of the elevator front spar cracking into two segments may cause the affected elevator to jam. Failure of an elevator bracket on both elevators, or progression of elevator front spar cracking into two segments on both elevators, could cause a loss of aeroplane pitch control.

This [Canadian] AD mandates a one-time inspection of the elevator PCU brackets, the horizontal stabilizer rear spar and elevator front spar with reporting of inspection findings. Any brackets found cracked are to be replaced with new brackets with improved strength. For any spar found cracked, obtain instructions to repair the spar from Bombardier and repair the spar accordingly. Additional corrective action may be considered depending on the results of the inspections findings.

You may examine the MCAI in the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2019-0322.

#### **Related Service Information under 1 CFR part 51**

Bombardier has issued Service Bulletin 84-55-09, dated June 7, 2018. This service information describes procedures for one-time detailed visual and fluorescent penetrant inspections for cracks and damage of the elevator PCU brackets (including the



surrounding area), horizontal stabilizer rear spar, and elevator front spar, and related investigative and corrective actions if necessary. The related investigative action is an eddy current inspection for cracking of certain mating holes of the horizontal stabilizer rear spar. Corrective actions include replacement of the elevator PCU brackets and repair of the horizontal stabilizer rear spar and elevator front spar.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

#### **FAA's Determination**

This product has been approved by the aviation authority of another country, and is approved for operation in the United States. Pursuant to our bilateral agreement with the State of Design Authority, we have been notified of the unsafe condition described in the MCAI and service information referenced above. We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop on other products of the same type design.

#### **Proposed Requirements of this NPRM**

This proposed AD would require accomplishing the actions specified in the service information described previously. This proposed AD also would require sending the inspection results to Bombardier.

#### **Costs of Compliance**

We estimate that this proposed AD affects 54 airplanes of U.S. registry. We estimate the following costs to comply with this proposed AD:



### **Estimated costs for required actions\***

<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>	<b>Cost on U.S. operators</b>
13 work-hours X \$85 per hour = \$1,105	\$0	\$1,105	\$59,670

\*Table does not include estimated costs for reporting.

We estimate that it would take about 1 work-hour per product to comply with the proposed reporting requirement in this proposed AD. The average labor rate is \$85 per hour. Based on these figures, we estimate the cost of reporting the inspection results on U.S. operators to be \$4,590, or \$85 per product.

We estimate the following costs to do any necessary on-condition actions that would be required based on the results of any required actions. We have no way of determining the number of aircraft that might need these on-condition actions:

### **Estimated costs of on-condition actions**

<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>
18 work-hours X \$85 per hour = \$1,530	\$0	\$1,530

### **Paperwork Reduction Act**

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB control number. The control number for the collection of information required by this NPRM is 2120-0056. The paperwork cost associated with this NPRM has been detailed in the Costs of Compliance section of this document and includes time for reviewing instructions, as well as



completing and reviewing the collection of information. Therefore, all reporting associated with this NPRM is mandatory. Comments concerning the accuracy of this burden and suggestions for reducing the burden should be directed to the FAA at 800 Independence Ave., SW, Washington, DC 20591, ATTN: Information Collection Clearance Officer, AES-200.

### **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

This proposed AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive



Director has delegated the authority to issue ADs applicable to transport category airplanes and associated appliances to the Director of the System Oversight Division.

### **Regulatory Findings**

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

1. Is not a “significant regulatory action” under Executive Order 12866;
2. Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979);
3. Will not affect intrastate aviation in Alaska; and
4. Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### **The Proposed Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:



Authority: 49 U.S.C. 106(g), 40113, 44701.

**§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

**Bombardier, Inc.:** Docket No. FAA-2019-0322; Product Identifier 2019-NM-039-AD.

**(a) Comments Due Date**

We must receive comments by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to Bombardier, Inc., Model DHC-8-400, -401, and -402 airplanes, certificated in any category, serial numbers 4001 through 4580 inclusive.

**(d) Subject**

Air Transport Association (ATA) of America Code 27, Flight controls.

**(e) Reason**

This AD was prompted by reports of cracked elevator power control unit (PCU) brackets on the horizontal stabilizer rear spar and cracking on the elevator front spar. We are issuing this AD to address this condition, which, if not detected and corrected, may cause failure of an elevator PCU bracket or fracture the front spar into two segments; either structural failure may cause a jam in one elevator or a loss of airplane pitch control if both elevators are affected.



**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Inspections**

No earlier than 7,500 total accumulated flight hours, but before accumulating 8,000 flight hours after the effective date of this AD: Perform detailed visual and fluorescent penetrant inspections for cracks and damage of the elevator PCU brackets, horizontal stabilizer rear spar, and elevator front spar, in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 84-55-09, dated June 7, 2018.

(1) If any crack is detected on any elevator PCU bracket, and no crack or damage is found on either spar: Before further flight, replace the elevator PCU bracket with a new bracket, and do all related investigative and corrective actions, in accordance with the Accomplishment Instructions of Bombardier Service Bulletin 84-55-09, dated June 7, 2018.

(2) If any crack or damage is detected on any horizontal stabilizer rear spar or elevator front spar: Before further flight, repair using a method approved by the Manager, New York ACO Branch, FAA; or Transport Canada Civil Aviation (TCCA); or Bombardier, Inc.'s TCCA Design Approval Organization (DAO). If approved by the DAO, the approval must include the DAO-authorized signature.

**(h) Reporting**

At the applicable time specified in paragraph (h)(1) or (h)(2) of this AD: Report the results of the inspections required by paragraph (g) of this AD to the Bombardier



CMDB Focal by fax 1-416-375-4538 or email at cmdb.requests@aero.bombardier.com, in accordance with the instructions of Bombardier Service Bulletin 84-55-09, dated June 7, 2018. If operators have reported findings as part of obtaining any corrective actions approved by Bombardier, Inc.'s TCCA DAO, operators are not required to report those findings as specified in this paragraph.

(1) If the inspections were done on or after the effective date of this AD: Submit the report within 30 days after the inspections.

(2) If the inspections were done before the effective date of this AD: Submit the report within 30 days after the effective date of this AD.

**(i) Other FAA AD Provisions**

The following provisions also apply to this AD:

(1) *Alternative Methods of Compliance (AMOCs)*: The Manager, New York ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to ATTN: Program Manager, Continuing Operational Safety, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7300; fax 516-794-5531. Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.



(2) *Contacting the Manufacturer:* For any requirement in this AD to obtain corrective actions from a manufacturer, the action must be accomplished using a method approved by the Manager, New York ACO Branch, FAA; or TCCA; or Bombardier, Inc.'s TCCA DAO. If approved by the DAO, the approval must include the DAO-authorized signature.

(3) *Reporting Requirements:* A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2120-0056. Public reporting for this collection of information is estimated to be approximately 1 hour per response, including the time for reviewing instructions, completing and reviewing the collection of information. All responses to this collection of information are mandatory. Comments concerning the accuracy of this burden and suggestions for reducing the burden should be directed to the FAA at: 800 Independence Ave. SW, Washington, DC 20591, Attn: Information Collection Clearance Officer, AES-200.

**(j) Related Information**

(1) Refer to Mandatory Continuing Airworthiness Information (MCAI) Canadian AD CF-2018-34, dated December 17, 2018, for related information. This MCAI may be found in the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2019-0322.



(2) For more information about this AD, contact Andrea Jimenez, Aerospace Engineer, Airframe and Mechanical Systems Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7330; fax 516-794-5531.

(3) For service information identified in this AD, contact Bombardier, Inc., Q-Series Technical Help Desk, 123 Garratt Boulevard, Toronto, Ontario M3K 1Y5, Canada; telephone 416-375-4000; fax 416-375-4539; email [thd.qseries@aero.bombardier.com](mailto:thd.qseries@aero.bombardier.com); Internet <http://www.bombardier.com>. You may view this service information at the FAA, Transport Standards Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

Issued in Des Moines, Washington, on May 2, 2019.

Michael Kaszycki,  
Acting Director,  
System Oversight Division,  
Aircraft Certification Service.

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